

THE AMERICAN PSYCHOLOGIST

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THE AMERICAN PSYCHOLOGIST

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SOCIETY OF EXPERIMENTAL PSYCHOLOGISTS

Princeton Bicentennial, April 9 and 10, 1947

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INDUSTRIAL PSYCHOLOGY AS MANAGEMENT TECHNIQUE AND AS SOCIAL SCIENCE¹

ARTHUR KORNHAUSER

Columbia University

Industrial psychology is potentially one of the broadest and most significant divisions of psychology. In practice, however, it has developed predominantly as a management technique. Rarely is the research activity conducted from *society's* standpoint.

No invidious distinction is intended. Improvement of management procedures can be enormously valuable. Nor is it suggested that the two types of development are opposed. The title of the paper is "industrial psychology as management technique and as social science"—not management technique *versus* social science.

PSYCHOLOGY FOR MANAGEMENT

Industrial psychology as management technique is well known and highly successful. It includes all the psychological work that is done to assist business management in solving its human problems. The industrial psychologist is hired by employers and merchants to help them deal more effectively with their employees and customers. In the main, this has meant work on immediate, more or less technical problems. It has meant employment testing, consumer surveys, job evaluations, rating systems, supervisory training courses, job training techniques, employee attitude polls, improvement of work processes and surroundings, measurement of advertising effects, and many similar research and service functions.

These management uses of psychology are important and greatly needed. When the work is technically competent and in accord with decent professional ethical standards, I think all of us would say "the more the merrier." With or without our blessing, there is little doubt that "corporation psychology" will continue to flourish. Managements'

needs and desires being what they are, and psychologists' attitudes toward ample financial rewards being what they are, the result is pretty well assured.

INDUSTRIAL PSYCHOLOGY AS SOCIAL SCIENCE

Meanwhile industrial psychology as *social science* remains a puny infant—if not, indeed, still in embryo. The problem is serious. All over the world, men struggle to reconcile the demands and the strains of modern industry with a humanly satisfying way of life. Widely and persistently, the conflicts between the working people of industry and the owners and managers of industry disrupt or threaten our social unity and stability. The human problems of industry and economic relationships lie at the very heart of the revolutionary upheavals of our century. One might expect industrial psychologists to be fired by the challenge of these issues. But most of us go on constructing aptitude tests instead—and determining which of two advertising slogans "will sell more of our company's beauty cream."

The contrast is not between pure and applied psychology. The social research under discussion also aims at useful applications. Nor is the difference that between *social* psychology and other branches of psychology. The methods and conclusions of social psychology may be employed either in improving management procedures or in the socially oriented applications. The same is true, of course, of experimental psychology, clinical psychology, psychometrics, and other subdivisions of our science.

The essential contrast has to do with who *controls* the research, and to what ends. *Do we work on the problems of the private businessman, or on the problems of society?*

While the dividing line between management technique and social science is blurred, the dichotomy is useful as a way of pointing to the fact that the management approach leaves out much that is important

¹ This is a revised form of a paper read at the annual meeting of the New York State Association for Applied Psychology, February 1, 1947.

in industrial psychology and that it imposes certain characteristic viewpoints and limitations.

LIMITATIONS OF THE MANAGEMENT APPROACH

For one thing, industrial psychology for management tends to concentrate on restricted and short-run research undertakings. Management pays for research which promises to yield definite returns. It wants answers to concrete, practical problems, usually pretty immediate ones.

Certainly there are exceptions. Some psychological work conducted for corporations does extend far into the territory of "social science." For example, the elaborate Hawthorne research program of Western Electric Company, the work of Kurt Lewin's students at Harwood Manufacturing Company, studies in which others of us have attempted to draw general conclusions regarding workers' feelings and attitudes, all illustrate the way management research may at the same time broaden existing knowledge of human relations in industry. This can scarcely be claimed, however, for more than a very small fraction of management sponsored psychological work.

But psychological activities for industry, in addition to being typically rather narrow and immediate, are subject to an even more distinctive limitation. They are characterized by the fact that business management constitutes a special interest group which manifests its special viewpoint in respect to research as in other matters. Certain areas of research are tabu. Certain crucial variables must not be dealt with. We must avoid explicit analysis of the broad and basic problems of *power and authority* in economic life. Management's prerogatives are not to be tampered with; studying them might reveal needed changes or concessions. Likewise the motives and private attitudes of top executives are sacrosanct. Research is usually steered away from all such matters. They are dangerous.

For a socially oriented industrial psychology, however, it is these very areas that are of utmost importance.

In mentioning these facts, there is no thought of *blaming* business men. Labor unions or other special interest groups would no more willingly sponsor research that might boomerang—or be uncomfortable. No group cares to support investigations that it fears may be used in bringing changes to which it is opposed.

THE NEED FOR A SOCIAL APPROACH

But for society as a whole—and for independent psychologists—business management's type of industrial psychology, however useful and defensible, is not enough. The *basic* problems cry for solution. Whether under private capitalism or some other economic system, the next decades have somehow to steer or muddle their way to answers. It may be that psychologists and their fellow social scientists can do very little. But it *may* be that they can help mightily. Without trying, we shall never know.

The emphasis of what we are calling industrial psychology as social science is on the broad, long-run, socially significant problems. While not nearly all industrial psychological work done under non-business auspices qualifies, such research at least has greater *opportunity* to bite into these larger questions. For example: What are the strains and the long-run effects which specialized machine processes and assembly lines impose on factory workers? What do unemployment and job insecurity mean in the personal development of working people and their children—and what do they mean to their social and political views, particularly in a period of world-wide Socialistic, Communistic, and Fascist bids to displace private capitalism and to provide security? What are the possibilities and the limitations of democratic social participation within industrial units whose structure remains essentially autocratic? What changes in the government of industry are necessary in order to develop working relationships that are humanly satisfying as well as productive? Do men in top positions of power in industry genuinely believe in democratic participation by working people? What influences, positive and negative, are exerted by labor unions on the personal development and adjustment of working people? What fundamental psychological principles of sound administration and peaceful adjustment of group conflict can be formulated? One could continue indefinitely with a list of such questions.

The important point here is that psychologists pay so little attention to them. The challenging task is to translate these transcendently big issues into research programs. But short of entire programs, even a nibble here and there is a beginning, a move in the right direction.

FIRST STEPS HAVE BEEN TAKEN

There are enough of these initial gropings to indicate that an industrial psychology on a social science level may be in the making. These small moves out on the fringes of what we think of as industrial psychology are potentially the most significant of new developments in the field. If vigorously pursued, they would soon overshadow all specific technical advances for management. What is of paramount importance is the problems we choose to work at.

Mere mention of a few examples will indicate the beginning that has been made on these broader problems. One line of work is well represented by Wyatt's studies under the British Industrial Health Research Board. Through the 20's and 30's he and his associates conducted a long series of inquiries and experiments on repetitive factory operations, studying the effects of such work, its psychological characteristics, and the conditions which help or hinder it. Several German investigators in the 20's carried on related studies.

Elton Mayo's trail-blazing work is well known. More than anyone else, he has emphasized the broad social background factors and the subtle personal needs and emotions which determine working relationships, and the vast significance of informal organization on the job.

The M.I.T. group, following leads laid down by Dr. Lewin and Dr. McGregor, has been working intensively on the dynamics of relationships within groups, in industry and elsewhere. How is democratic group participation fostered? How do group discussions and decisions affect the spirit and performance of the group members? What are the problems and the characteristics of effective industrial leadership?

In a quite different direction, Dr. Shartle at Ohio State University is tackling the problem of "administration." He is analyzing the activities of administrators in varied types of organizations including labor unions, cooperatives, and business concerns.

Other psychologists have investigated union-management conflicts and cooperative arrangements, studied unemployed people, and carried on community attitude surveys among workers and specialized

inquiries among labor leaders and particular occupational groups.²

In these last years, sociologists and anthropologists have been more active in these matters than have psychologists. In fact, these disciplines bid fair to push ahead alone on studies in which psychologists should surely share. "Should" share, that is, because we can contribute distinctively, if only we get going. The sociological and anthropological work includes the industrial aspects of community studies by Lynd, Warner, and others; investigations of the human side of labor relations in the research centers at Chicago, Harvard, and Yale (notably by Gardner and Whyte at Chicago, Roethlisberger and Selekman at Harvard, and Bakke at Yale); intensive studies of white collar workers by C. W. Mills at Columbia, and so on.

I am not offering any of this work as more than an encouraging start. Nearly all of the psychological studies, and many of those by other social scientists as well, fail utterly to deal with "class" and power relations. Enthusiastic accounts of employer-employee "cooperation" or of employee "group decisions" within particular companies at particular times, for example, seem a little remote from the larger context of big business, big unions, and their struggles for security, power and advantage. Cooperation and participation may appear to be near solutions while employees are weak and leaderless—or when the employer is the underdog; glowing conclusions, however, should certainly be postponed until the implications are examined under more typical and varied circumstances and over longer periods—during downswings in business as well as in prosperous periods, for example. We can be seriously misled by specially favorable "pretty cases." A reminder is constantly in order that the most outstanding and widely acclaimed study of labor-management relations by social scientists is reported in the year 1939 in a fat volume in which labor unions are not once mentioned.

A PROPOSED PROGRAM OF ATTITUDE STUDIES

One of the most promising and socially important research areas of all has been almost completely neglected by psychologists. I refer to broad-gauge atti-

² Good examples of such material may be found in *Industrial Conflict: A Psychological Interpretation*. New York: 1940 (First Yearbook of the Society for the Psychological Study of Social Issues. Ed. by G. W. Hartmann and T. Newcomb).

tude and opinion studies bearing on labor relations. The possibilities can be illustrated by considering how the ordinary employee attitude survey for management would be changed if its purpose were no longer to suggest short-run measures for management's use in increasing employee loyalty and morale in the particular company, but rather to help provide a basis for wise social policy regarding industrial work and labor relations.

The usual employee morale survey deals only with things liked or disliked about the work, the company, and relations on the job. The industrial group is studied in the artificial isolation of the shop. Nothing about home and family, or friends and social life; nothing about problems as consumers; nothing of the economic, social, political pressures affecting the employees; nothing about labor unions or "class" feelings; scarcely anything regarding personal aspirations and frustrations, social outlook and expectations.

A program of socially oriented attitude studies needs to go into all these matters. Moreover, the investigations cannot be limited to employees; employers and all other groups involved in industrial relations must also be studied. What do the different groups basically want in their economic relations? What attitudes and beliefs do they hold that are in conflict and what ones furnish a basis for cooperative and peaceful industrial adjustments? And what factors account for the opposed views? How closely are they associated with contrasting socio-economic positions? How closely with differences in personal background and with vocational and social adjustments? These are the central questions for the proposed type of research to tackle.

It is particularly important to determine the pressures for industrial change and the rigidity of the resistance to such change. This refers above all to changes in the distribution of economic power and changes in the direction of increased social control of industry. Specific attitude questions about working conditions and standards of living, labor union practices, anti-strike laws, private property rights, management prerogatives, depressions and unemployment, opportunities for personal advancement and for participation, satisfactory and unsatisfactory features of everyday life, as citizens, consumers, community members—all such questions would have their chief significance in the light they might throw

on the fundamental issue: What changing demands do the attitudes imply concerning the way industry is run? What are the resistances to such change? And how intense and insistent are the feelings? How crystallized or fluid? How extreme?

If economic power relations are changing—and how can anyone doubt the fact—the problem of democratic society is to bring those changes as deliberately, rationally, and peacefully as possible. Far-sighted attitude studies should contribute to that end. We need to obtain information which will help clarify the conflicting and the common aims of major groups in their relations to industry and thus serve to augment mutual understanding. If groups and their leaders can gain a truer view of what they themselves stand for and want, and what others want, the air is to that extent cleared. Further clarification, compromise and concession can proceed from there—along with efforts to educate and to change the views which are in disagreement.

This is not the place to describe procedures and specific designs for such studies. A few brief notes will suffice.

Initial investigations can probably best be conducted in selected medium-sized industrial cities, each containing a few principal employing companies. Information and attitudes would be obtained in each community by means of informal and semi-formal interviews.

The sampling should be on a community-wide basis, systematically covering all income and occupational levels, with special care to reach even small groups that stand in important relationship to labor-management problems. The respondents would include rank and file workers of the various companies, the several levels of management, middle class business and professional people, political figures, union leaders, key policy-makers in local corporations and banks. What is crucial is the picture these groups have of their own positions of power and security, or their lack of these, and their feelings regarding the direction and amount of change they will fight for or tolerate.

At the same time, it would be extremely important to determine the attitudes and views of influential persons outside the community who have specially intimate relations to local affairs. These would include absentee owners of business, big city financial institutions with local interests, dominant suppliers

and customers of local industries, and regional and national labor union officials.

The interviews should be planned to ascertain not only attitudes in respect to labor relations and surrounding issues, but likewise to secure information about the individuals themselves and the influences impinging upon them which help explain their discordant views. The explanatory conclusions would be drawn in part from the respondents' own subjective reports of the reasons for their attitudes (and from critical interpretations of this subjective evidence) and in part from analyses of the objective and subjective correlates of the divergent views held.

The correlational factors are to be obtained not only in the interviews (facts about schooling, early home life and relations to parents, job history, the person's relevant information, beliefs and expectations, current and past satisfactions and frustrations...) but also by means of independent investigation in the community and from testimony regarding historical and current influences. For example, employees of different companies can be compared in the light of ascertainable facts about working conditions and labor policies in those establishments to see whether these factors make a significant difference or are submerged by more pervasive local and national influences.

Similarly, the effects of community characteristics should be studied by comparing matched towns which differ widely in their history of labor-management conflict, their extent of union organization, or other significant variables of special interest. The effects of widespread influences such as rising living costs or decreasing employment should be analyzed in continuing trend studies, preferably by the use of "panel techniques," where the same persons are periodically re-interviewed. These inquiries would attempt to trace the distinctive subjective effects of changing conditions peculiar to individuals and special groups as well as to note the more general consequences of common influences affecting large sections of the population.

VALUE OF THE SUGGESTED RESEARCH

A series of investigations along the above lines could help answer many vital questions pertaining to labor-management problems and class relations in our society. The results would be valuable at two

levels, one descriptive and immediately practical, the other explanatory and contributing to social psychological generalizations. The latter may also prove extremely practical, of course—in the slightly longer run, if not tomorrow morning.

On the descriptive level, the findings would provide authentic, impartial information concerning the feelings and attitudes that characterize conflicting industrial groups, thus helping to remove misconceptions and blind spots that interfere with constructive compromise and adjustment. At the explanatory level, the material would add, brick by brick, to the slowly growing structure of psychological knowledge regarding the conditions and motivations that produce group antagonisms and conflict and regarding those that lead to harmonious and cooperative relations. The evidence would test and refine current social theories and psychological interpretations dealing with group loyalties and oppositions and with the dynamics of inter-group and class relations and social change. Fortunately it appears feasible to push inquiries that will simultaneously serve both purposes, that of aiding present-day understanding and policy decisions and that of developing sound theory.

Among the more urgent questions on which the research can throw light are these: What are the predominant unsatisfied desires, the fears and tensions of different occupational groups? In what directions do they look for solutions? What information and misinformation have they, and what beliefs, about economic power relations? How adequately do labor leaders and management officials understand the deeper feelings and attitudes of the people they represent and those they deal with? What portions of the white collar groups identify their interests with those of organized labor and what portions with employers? Is industrial management losing the allegiance and backing of intellectuals and of technical, artistic, and professional groups—both those within industry and those outside? To what extent are middle class people generally confused and wavering in their attitudes toward private property rights, labor unions, big business, more government control or less government control? Do they—and do working people—feel unfairly dealt with? How far do the roots of labor unrest lie in industry and how far in factors outside industry? Do employees' dissatis-

factions and pressures for industrial change disappear under "good" management? What more, if anything, is needed?

And what of the people at the peak of the industrial power pyramid? Do they show growing readiness to accept new limitations on their "right to manage" in their own way? What reactions are evoked by actual or threatened curtailments of power imposed by organized labor and by government? Do top business circles manifest an increasing recognition of the wisdom or necessity for granting concessions in time? Or is the spirit that of staging a last ditch fight—even to the blotting out of political democracy if needs must be, to retain our present hierarchy of power and privilege?

These, I submit, are among the most crucial practical problems of our period. They deserve vastly greater attention than they have received by either social psychologists or industrial psychologists. Their study constitutes a major sector of what we have labeled "industrial psychology as social science."

Even the *management* psychologist needs to think and interpret his material in this broader frame of

reference. As industrial psychology is drawn more and more into the vital problems of employee motivations and labor relations, it can no longer retain its laboratory detachment, or bury itself within the shop it is studying. Plant walls are too thin to shut out the world.

Some readers will declare this is all Utopian. Maybe it is. Perhaps the battle lines of our society are so sharply drawn that non-partisan research on fundamental power relations is impossible. Perhaps social scientists who decide to work in these "dangerous" areas have no choice but to ally themselves on one "side" or the other—to use their research to prove a case, to furnish ammunition, to assist in manipulating others and "putting things over." I am not ready to accept this conclusion. I think we must *find* ways of studying these fundamental problems in the spirit of an open-minded search for true answers. Here and there a start has been made. But only the coming years can tell.

Management will see that *its* type of psychological work goes forward. The rest of us will be responsible for seeing that *society's* problems of industrial psychology are not ignored.

PSYCHOLOGICAL WRITING, EASY AND HARD

S. S. STEVENS AND GERALDINE STONE

Harvard University

Bad books on the subject of good writing, like tattered tailors, are a persistent anomaly. Clear, exemplary, insightful books on the art of casting prose are harder to come by. The trouble probably stems from the fact that reading and writing are psychological matters, to be unraveled by psychological insights based upon psychological experiments. Left to grammarians, and to writers both amateur and professional, the prescription for style becomes a set of do's and don't's aimed at embalming syntax and preserving verbal decorum. Examples of good writing are unerringly cited. Gems of style are agreed upon. But the crucial variables, the relevant dimensions, the what-really-makes-it-tick, have a way of escaping even those who produce the stuff.

The fresh fertility of the psychological approach shows itself in last-year's little book by Rudolf Flesch, *The Art of Plain Talk* (Harper). There we find rules for making writing hard to read, and for making it easy. Flesch builds his rules upon an analysis that ferrets out the factors affecting difficulty. He and others have studied how these factors relate to the reading comprehension of school children and how they relate to what is actually published in various segments of the public press. Out of these studies we get a formula—a simple little rule that tells us how to weight each of three factors in order to predict relative readability. It is a neat trick if it works. Flesch assures us that it works pretty well, provided we don't try to turn his simple yardstick into a magic wand. As a scale it correlates with what can be read by children in the various school grades and with what is actually printed in magazines ranging from comics to scientific journals. But it is only a scale, a rudimentary yardstick—not a ticket to literary fame.

Although the main feature of his book is the formula, Flesch almost wishes it were not. He rightly believes that he has other insights to convey. There are other dimensions to writing than bare readability. There are charm and ugliness, wit and vulgarity, originality and sham. These are not assessed by the numbers of Flesch's scale, nor are

many other factors that determine difficulty, like subject matter (e.g. scientific technicalities) and formal complexities (e.g. logical or mathematical relations). But for gauging the likelihood that a given bit of prose will carry its burden to a given class of readers, the formula is a plausible device. And as we shall see, it seems able to set psychological writings into a reasonable rank-order on the dimension of difficulty.

First a word about the scale. Building on previous studies in the psychology of reading, Flesch worked out his weightings in a Ph.D. Thesis called *Marks of Readable Style*. True to the Ph.D. tradition, this "was not a very readable book." But whatever its obscurities may have been, its recasting as *The Art of Plain Talk* is certainly popular writing at its top. Even the formula gets palatable serving—sweeter than it is going to get here. For we are going to take it at a single gulp, as follows:

Difficulty = .1338L + .0645A - .0659P - .75
where L is average sentence length; A is number of affixes per 100 words; P is number of personal references per 100 words.

Long sentences make reading hard and so do big words compounded of roots and modifiers (prefixes, suffixes, and 'interfixes'). Personal names and personal pronouns make things easier and get into the formula by subtraction. The minus constant at the end is there apparently to make everything come out conveniently as in Table 1.

The various levels of difficulty can be read on the average by the school grades indicated. But, Flesch warns, few of us like our own potential level. Typically we choose our copy at a level one or more steps down. If you want academics to read you when they do not have to, aim your composition at level 4 to 5 and make it sound like the Atlantic Monthly.

Since a formula is no fun if you don't use it, we set about to enjoy Flesch by getting the count on our colleagues. Of course we started with *Hearing by* Stevens and Davis and promptly confirmed student

judgment that it is very difficult: score 6.4. One passage scored 8.3! A graduate student then came up with the comforting remark, "If it scores above six, that means it's scientific." By this logic there can be no question about the scientific status of psychology.

TABLE 1
The Flesch Scale of Readability

SCORE	LEVEL	TYPICAL MAGAZINE	POTENTIAL AUDIENCE (GRADES COMPLETED)
Up to 1	Very easy	Comics	4th grade
1 to 2	Easy	Pulp fiction	5th grade
2 to 3	Fairly easy	Slick fiction	6th grade
3 to 4	Standard	Digests	7th or 8th grade
4 to 5	Fairly hard	Quality	Some high school
5 to 6	Hard	Academic	High school or some college
6 and up	Very hard	Scientific	College

Actually the 'Flesch counts' on what follows were all made by a single scorer, G. S. It is a tedious business, especially the counting of the affixes. In compiling Table 2 she counted about 25,000 of them. Some arbitrary judgment entered of necessity, but she tried to keep it consistent. She took between 10 and 48 hundred-word passages at random from each author. The selection was purely mechanical, except that pages of tables, bibliography, etc., were rejected.

Table 2 lists the books approximately in order from easiest to hardest as measured by the scale. The authors in Murchison's Handbook are listed separately. For each average score we have tabulated a standard deviation based on the scores of the separate passages. What these standard deviations reveal, aside from the author's variability, we do not know. What the whole table reveals is to us a reasonable validation of Flesch's formula. The books we find easy score low; those we find hard score high. But the correlation is not perfect. There are some interesting exceptions.

The fact of the matter is that after we had scored certain works about which we were curious, we looked about for examples that might fall nearer the ends of the scale. Various members of the laboratory made nominations of writers they thought might be very hard or very easy. In general their candidates scored as expected, but there was one glaring exception: Professor Koffka, about whom more later.

The popularizers scored low. It would now seem established that grown-up psychology can be dressed in short sentences. *Psychology for the Fighting Man* (3.5) puts 20 words between its periods and scatters only 32 affixes over each hundred words. *Mind Explorers* (4.3) has even shorter sentences but is richer in ten-dollar words: 50 affixes per hundred. Both books are highly readable as psychology goes. The first is more didactic, the second more narrative.

Even when he gets to anatomical descriptions—portrayed by most writers in serpentine sentences—the "fighting man" is let off with an easy recital. On p. 101 he reads:

"In the inner ear are the semicircular canals. These canals have nothing at all to do with hearing. The sense-organs in them, however, help a man to keep his balance, tell him when he is rotating, when speeding up or slowing down.

"In the inner ear also is the *cochlea*. This is a longish tube, curled up like a snail-shell, filled with liquid, and divided through its length by a partition. Part of this partition is a long strip of membrane, narrow at the broad base of the cochlea, wide at its tip. The auditory nerve-fibers begin in cells that rest on this membrane. When the vibrations get to this membrane, then you hear sound."

Mind Explorers is more gossipy and breezy—with some of the inevitable inaccuracies of popularized science. But the text is seldom tiresome, even when berating anthropomorphism, as on p. 270:

"Doubtless, laboratory animals consider all these tests so much nonsense. To the animals it must be quite unimportant that man can reason, use ideas, and make verbal formulations. For purposes of social organization and contented living the instincts of many animals are superior to the so-called reasoning ability of man. Yet we human beings, with our vast egos, measure the universe by our own pace. What we know, feel, see, taste, believe, and *are* must be the *right* way of life for all the beings on the earth."

We happen to know nothing at all about how the team of Winkler and Bromberg carried on: who dug up the facts and who stoked the literary fire. Pre-

sumably Bromberg, the M.D., gathered the clay and newswriter Winkler gave it the breath of life, but it is not a certainty that the talents of an M.D. would be a literary liability. In the team of Boring and Van de Water, about which we know more, there was initially a division of labor. It was Miss Van de Water, of Science Service, who knew the tricks of writing for the millions. She could chop sentences down to size and put in the short, vivid word and the personal touch. Professor Boring, an established master at Flesch-count level 6, had to learn. And gradually he did. He learned how hard it is to be easy. But he learned well enough so that before long the two authors were rewriting each other—ping-ponging each chapter back and forth until one of them let it pass. Boring says it was fun but that he would prefer not to earn his living at that kind of chore. A professor constrained to short sentences and deprived of his affixes feels like a duck hunter armed with a pea shooter.

Psychology for the Armed Services was a deliberate attempt to jack up the level of *P for the FM* and make it suitable for a college text. The target chosen was midway between the level of *P for the FM* and the level of the textbook by Boring, Langfeld, and Weld. Although the sights were set without benefit of Flesch, the hit was a bullseye on the scale of readability: $BLW = 5.1$, P for the *AS* = 4.3, P for the *FM* = 3.5.

Wertheimer's little book on *Productive Thinking* scores 4.6. The publisher is not wrong when he calls it "an unusual, original and seminal volume." It is original and seminal because it is Wertheimer: simple, shrewd, ingenious, observant. It is unusual because, so far as we are aware, no other treatise on the psychology of man in thought is so readable. It reports original research and inquires into such esoteric subjects as the productive cerebrations of Einstein, Galileo, and Gauss. It examines historical notions about logic and association. It propounds

TABLE 2

NAME OF AUTHOR	BRIEF TITLE	NO. OF SAMPLES	FLESCH SCORE	S.D.
Boring & Van de Water	Psychology—Fighting Man	20	3.54	1.06
Winkler & Bromberg	Mind Explorers	20	4.34	.95
Boring	Psychology—Armed Services	20	4.32	.88
Wertheimer	Productive Thinking	20	4.63	1.01
Woodworth	Psychology	20	4.87	.77
Ruch	Psychology and Life	20	5.05	1.13
Munn	Psychology	20	5.07	.81
Boring, Langfeld & Weld	Introduction to Psychology	40	5.11	.94
Koffka	Gestalt Psychology	12	5.37	.54
James	Principles: Vol I	14	5.67	.88
	Principles: Vol. II	12	6.47	2.06
	Principles: Vols. I and II	26	6.04	1.59
Allport	Personality	11	5.99	.52
Morgan, C. T.	Physiological	10	6.00	.93
Boring	Sensation and Perception	48	6.06	1.28
Stevens & Davis	Hearing	12	6.39	.95
Kantor	Principles	20	6.67	1.27
Morris	Signs, Language and Behavior	20	6.72	1.10
Adler	What Man Has Made of Man	20	7.15	1.55

Murchison: Handbook of General Experimental Psychology

Morgan, T. H.	Heredity	10	6.13	1.02
Hecht	Vision: II	12	6.26	.71
Graham	Vision: III	10	6.36	.35
Troland	Vision: I	10	6.43	.76
Lashley	Learning: III	10	6.66	.79
Davis	Audition: III	13	6.85	.99
Crozier	Chemoreception	14	7.13	.86

a theory for the structural dynamics of thought. All this in sentences that average 18 words!

Wertheimer is easy to read, but he is not easy. You cannot afford to drowse with the expectation of waking up in the next chapter ready to roll on with the plot. His reasoning is tight. His mathematical and geometrical problems must be understood to be followed. In short, the study of thinking requires thought. Wertheimer's prose does not swing along like Irwin Edman's. It jerks in spots, and taxes the reader with puzzles. Nevertheless, the count of 4.6 is a good index of how Wertheimer is crisp and clear on a topic where authors are mostly discursive and vague.

Next come the standard elementary texts. At 4.9 Woodworth's persistent best seller seems to have the edge over Ruch, Munn and BLW, all near 5.1. But these are small differences, and if you swear by one or another of the authors it must be for reasons other than their Flesch score. They are all at the level readable by college students and they are all "accepted." Whether they make good reading like Paul de Kruif or Dale Carnegie is another matter. Flesch would predict that they couldn't possibly, for how then could they have gotten past the instructor? Flesch complains that textbooks seldom get an even break: they don't stand or fall on the basis of acceptance by their readers. They get censored by the man who teaches the course.

Only a little higher on Flesch's scale than the elementary texts is Koffka's *Principles of Gestalt Psychology*. Koffka more readable than William James! This is a startling bit of news. It will take some explaining. The Harvard graduate students don't believe it, because they read Koffka and sweat. And, before his opus had been counted there were several who were backing Koffka for the lead as high scorer. But there it is: Flesch count 5.4.

Now how can Koffka, the students' choice for unreadability, score so low? Or conversely, at 5.4 on the scale, how can he be so thoroughly uphill? Opinion around Harvard seems divided on this question, but this opinion is based on mere casual introspection, not on the result of careful analysis. A few things appear evident, however. For one thing, Koffka helps his score by peppering his passages with personal pronouns: 5.8 per hundred words. But his "I," "we" and "you" are rhetorical devices—

he is actually very rarely talking about us or about himself. He is talking about abstractions and complicated relations and *he* and *we* get into it as mere guinea pigs in an experiment. He uses many non-specific terms and pronouns whose antecedents are hard to keep track of. And too often he diverts our attention from the meat of the immediate issue by allusions to related questions and to the intricacies of the logic of his own presentation. Here is a sample from p. 280.

"In the first cases, real moving objects present in the field, the shift of the retinal pattern leads to behavioural motion of objects, whether I fixate a non-moving object or follow a moving one with my regard; in the second case, when my eyes roam over stationary objects, such a shift will *not* have this result. Although the two facts belong closely together, the second one will be fully discussed in Chapter IX, after we have introduced the Ego. Here we concentrate mainly on the first, even if we cannot entirely avoid referring to the second. Thus we turn now to the theory of perceived motion."

This passage scores a bare 4.2. It has 21-word sentences, 41 affixes and 7 personal pronouns per hundred words.

Where could a passage like this be found in William James? This old master, the despair of imitators, runs up a count of 6.0 when the scores on both volumes are averaged. He also has the highest standard deviation of the lot. His variability is due to sentence length: one sample averaged 14 words, another 56. But James wrote in a century when periods were less highly regarded than at present, and some of his sentences become full-length portraits of a fact or phenomenon, replete with examples, and graphically adorned with adjectival shadings. James is nearly always vivid, nearly always ready with concrete imagery. He is not above being tedious when the subject matter is tedious, but at his quotable best—when (in Vol. 1, p. 121) he is telling us about habit, "the enormous fly-wheel of society"—he leaves almost nothing to be desired. And down comes his Flesch count to 4.1.

The rest of the authors scoring between 6 and 7 would seem to be appropriately placed. Not that they are homogeneous in literary skill, but in these books they are writing technical stuff for college

graduates and they fall where Flesch predicts. *The Handbook of General Experimental Psychology* averages over 6.5, which is high—and hard. It shows what happens in handbooks, and why graduate students suffer. A handbook at level 5, a point and a half below Murchison, would probably put too much of a strain on the contributors, but is there any reason why the ceiling could not be lowered to 6? T. H. Morgan almost made it.

When an author is in the mood for verbal eruption it does not require even the pressure of a handbook to draw out of him long, overstuffed sentences. Professor Kantor gets his score up to 6.7 while writing his own *Principles*, where elbow room for simplicity should have been ample. And as though the jungle of our psychological jargon were not already dense enough with affixes, Kantor multiplies them in novel arrangements. On p. 225 he says:

"The elementary fact of actualizing the stimulatory function of objects, with its consequent selectional and organizational implications, points to a satisfactory behavior relationship between the organism and its surroundings which well merits the name of control."

Very rarely do we find a sentence with as many affixes as words, but this one falls short by only five.

Mr. Adler runs up his score to 7.2 by similar devices. He hits a high, shrill note of abstraction and holds it with seldom a pause for breath. In a particularly breathless phase on p. 167 he reads like this:

"The phenomena of change require the notion of contraries which inhere in matter disjunctively and lead to a conception of matter as having the potentiality for the opposite contrary whenever a given form determines it actually. The contraries are forms; they are determinations of matter. The perpetual process of change is understood when it is grasped that no single form determines matter absolutely, i.e., exhausts its appetite or potentiality for contrary forms. Efficient causality in change is the energetic reduction of the potentiality of matter for a given determination to that determinateness actually."

The amazing thing is that Mr. Adler can keep it up from cover to cover. Polysyllabication in every line.

In some ways *Signs, Language and Behavior* at slightly over 6.7 is the hardest book on the list. A sample of Morris' message and of his way of putting it is taken from p. 219.

"When so conceived, pragmatics, semantics, and syntactics are all interpretable within a behaviorally oriented semiotic, syntactics studying the ways in which signs are combined, semantics studying the signification of signs, and so the interpretant behavior without which there is no signification, pragmatics studying the origin, uses, and effects of signs within the total behavior of the interpreters of signs."

The book is sober and earnest, packed with neologisms, innocent of gossip and humor. Used as a text in a Harvard course it furrowed the brows of the students who struggled through it. But like the agreeable exhaustion of a hard game of squash, the mental toil of the push through Morris was judged by several readers to be satisfying exercise. They knew something when they got through. Would they have known more if the affixes had been fewer?

Whatever else they may add up to, these examples and these Flesch counts show the feasibility of the psychological approach to readability. Better formulas are sure to come, but the one used here is good for a start. It taps at least some of the essential components of communication; it offers a handy guide to the capacities of different classes of readers; it is a boon to the academic who wants to be simple but who knows not what it means. It is a way to insight. And after one has composed his piece, it is a means of finding out to whom he thinks he is writing.

This article scores 3.2 (ridiculously easy for a psychological journal). Its writing was a collaborative enterprise in which Stevens laid the first draft and Stone used the red pencil. Hers was the thankless part of the task. Because, except for those she missed, the gaucheries have been pruned away and filed where you can not see them.

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PSYCHOLOGISTS' FINANCES

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American Psychological Association

Psychologists' salaries are going up. It is indeed fortunate that this is true, for so are their expenses. Expenses, in fact, have gone up faster than salaries. And psychologists' salary increases have lagged behind national income figures. The following paragraphs estimate our financial position nationally in respect to these variables.

Two recent articles have shown substantial increases in the average salaries paid psychologists. Bryan and Boring (1) reported a median salary for all psychologists of \$3030 in 1940. In 1944 the median had increased to \$3525. Smaller or larger gains were made by all sub-groups analyzed—men, women, persons with the Ph.D., and those without it. Percentage gains for three classes: all psychologists, those with the Ph.D., and those without it, were respectively 16, 15, and 27. Burnham (2), studying the salaries of Connecticut psychologists, found increases averaging \$300 a year between 1944 and 1945. Medians for 1940, 1944, and 1945 are shown in Table 1.

TABLE 1
Median salaries for different groups of psychologists in 1940, 1944, and 1945

GROUP	MEDIAN SALARIES		
	1940	1944	1945
All psychologists.....	\$3030	\$3525	\$3819*
Psychologists with Ph.D.'s...	3405	3907†	4200*
Psychologists without Ph.D.'s	2343	2965†	3295*
Male psychologists.....	3195	3910	
Female psychologists.....	2490	2850	
Connecticut psychologists....		3600	3900
Connecticut Ph.D.'s.....		3900	4200
Connecticut M. A.'s.....		2700	3000

* Estimates made on basis of salary increases of Connecticut psychologists from 1944 to 1945.

† These two figures are approximations based upon the data in Table 8 of reference 1.

In Figure 1 curves are drawn showing the 1940, 1944, and 1945 figures for three groups of psychol-

ogists. Median salaries for 1940 were used as a base and plotted at the 100 per cent point. Medians for 1944 were plotted for each group in terms of percentage increase over 1940. Estimates for 1945 are plotted for the same three groups. These estimates were obtained by comparing the 1944 Connecticut figures with Bryan and Boring's national figures for the same year and assuming that the ratio of Connecticut psychologists' salaries to the national sample was the same in 1945 as in 1944. That gave three terms of a proportion: 1944 Connecticut, 1944 national, and 1945 Connecticut. The unknown term, 1945 national, was computed from the proportion and plotted in Figure 1. The average psychologist making \$3030 in 1940 was thus estimated to be making \$3819 in 1945.

For more recent years, another estimate of the increase in salaries was obtained from the job requests received by the APA personnel placement service and its predecessor, the Office of Psychological Personnel. The largest single group of requests was for college instructors. The median salary offered in the first four months of 1944, 1945, 1946, and 1947 for instructors was:

YEAR	MEDIAN SALARY OFFERED	NUMBER OF REQUESTS IN FOUR MONTHS
1944	\$2000	5
1945	2200	7
1946	2500	18
1947	2675	12

These figures are also plotted in terms of percentage increase in Figure 1. I do not know at what salaries these positions were actually filled; the figures are those the appointing officers mentioned as initial offers in trying to find instructors.

Figure 1 also shows some national statistics from the Department of Labor with which psychologists' salaries can be compared. The government cost-of-living index rose a little faster than salaries from 1940 to 1943, held rather steady from 1943 through

1945 while salaries tended to catch up, and then jumped sharply when OPA controls were removed in 1946.

Per capita income rose much more rapidly than psychologists' salaries. While the median psychologist in 1945 was congratulating himself on the fact that his salary was about 25 per cent greater than it had been in 1940, the average citizen of the country was congratulating himself on having an income twice as great as it had been in 1940.

TABLE 2

YEAR	MARRIED, NO CHILDREN, TO HAVE \$2000 LEFT AFTER PAYING TAX	MARRIED, TWO CHILDREN, TO HAVE \$4970 LEFT AFTER PAYING TAX
1939	\$2000	\$5000
1940	2000	5021
1941	2025	5204
1942	2124	5563
1943	2238	5924
1944	2248	5800
1945	2248	5800
1946	2184	5575

Rising prices and more money in circulation placed the psychologist in a more unfavorable position in 1945 than in 1940. A further factor was the income tax. Income taxes alone took up all or most of the dollar increase in his salary. In Table 2, the income tax for two typical psychologists is computed. One is an instructor with a wife but no children whose salary was \$2000 in 1940. That year he paid no federal income tax. In 1944 he had to make \$2248 in order to pay his income tax and have \$2000 left. The other is a psychologist with a wife and two children. He earned a salary of \$5000 in 1940 and had to pay only \$30 income tax. In 1944 he had to make \$5800 in order to have the same amount, \$4970, left after paying his income tax. These figures were obtained on the assumptions that family size did not change, that the wives were not working, that there was no other income, and that from 1939 through 1943 both individuals were entitled to deduct ten per cent of total salary for deductible items. From 1944 on, the income tax of the \$2000 man was taken from the tax-computation tables which accompanied the income tax form. From 1944 on, the \$5000 man was credited with the standard deduction of \$500 each year. Figures for all years from 1939 through 1946

are shown below. The incomes are those necessary to have the same amount left after paying income tax.

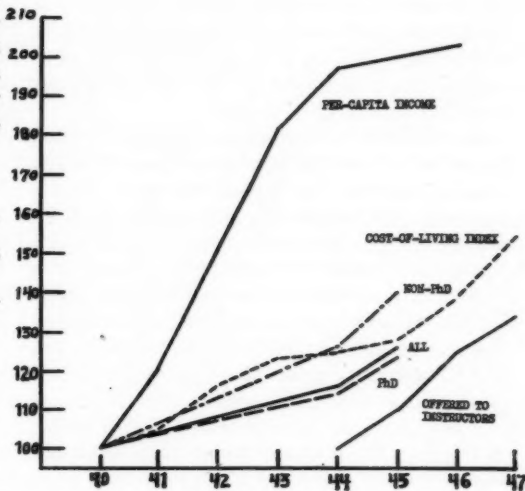


FIG. 1. INCREASE IN COST OF LIVING AND IN PSYCHOLOGISTS' SALARIES

All curves except one are plotted as percentages of 1940 figures. Salaries offered instructors are plotted as percentages of 1944 bids.

The percentage increase in salary from 1940 to 1944 necessary to allow these two men to have the same number of dollars left after paying income tax was 12 per cent for the \$2000 man and 16.7 per cent for the \$5000 man. The reported percentage increase in median salary for all psychologists during this period was 16.3. Thus income tax alone used up most of the extra dollars that psychologists were earning.

These changes in economic conditions and in taxes affect different segments of the population differently. Prices and taxes are higher now for everybody than they were in 1940. Yet, in many industries, a worker's wage today buys more goods than it did then. On the average, workers in the automobile and publishing industries and in utilities can buy much the same. Big wage gains have been made in coal mining, textiles, apparel, construction, lumber, and leather goods. But white-collar earnings have suffered. Real earnings are down among govern-

ment workers, teachers, financial employees, some retail employees, and many executives.

It is estimated that the 30 psychologists who earned more than \$10,000 in 1940 (1, Table 8) could obtain only \$5,400 worth of 1940 goods on the same salary today. If these 30 psychologists were to be as well off now as they were in 1940, each should now earn more than \$25,000 a year.

The President's Commission on Higher Education has recently completed a national survey of college teachers' salaries. An average increase of 30 per cent since 1940 was found. Increases planned for next year (1947-48) average an additional 8 per cent. These figures apply to college teachers in all fields and not to psychologists alone. The increases shown in Figure 1 apply to all psychologists and not to college teachers alone. Yet the two sets of data agree; psychologists as a group have apparently received about the same increases as college teachers.

Academic psychologists share with all their faculty colleagues a less favorable salary status than they had in 1940. Complaining about the cost of living is not, however, a major occupation of psychologists. I had little success in promoting this topic at the regional meetings this spring. The magazine *Time* has repeatedly said that the high cost of living is a main topic of conversation. I asked a prominent Midwestern psychologist if that was true in his department. He replied that among the professors, what to do about clinical psychology was the main topic; but that HCL probably took first rank among the younger staff members.

I continued to ask others about living costs, and turned up a variety of items. Even with a little encouragement, Northwestern University faculty wives who came to the Midwestern meeting would not complain of the cost of dinner, but rather of the difficulty of obtaining sitters at any price to stay with the children. An Eastern psychologist said he was never in on these discussions at his home institution because the physics and psychology departments had the best salaries on his campus. One couple men-

tioned, somewhat wryly, that they were not building the house they had planned; they were eating their savings instead. Two psychologists did not know that the cost of professional journals could be deducted from their incomes in making income tax returns.

While there is not a great deal of overt complaint, financial difficulties obviously affect psychologists' behavior. At the Eastern Psychological Association, many came Friday morning, and saved the cost of Thursday night in an Atlantic City hotel. Luncheon in the main dining room was attended by a gay crowd of psychologists welcoming each other. At dinner time the place was empty. A menu explained why: \$4.50 for a minimum dinner and \$6.00 for a steak. Many psychologists ate instead at a block-long seafood restaurant where a seafood platter could be obtained for \$2.00; others were at Childs. In contrast, when the Midwestern Association met a week later at the Edgewater Beach Hotel in Chicago, both rooms and meals were less expensive; there was little effort to try to save by going elsewhere for meals.

As a profession, we are better off than some others. But we are much worse off than we were in 1940 when we compare ourselves with national averages. We can be pleased with the salary increases we have received since 1940, but the figures quoted above answer the perennial end-of-the-month question of where has the money gone; it has gone for tax increases, for increased cost of food and clothing, and for drastic increases in cost of services. Unless these costs come down, we will need substantial further salary increases even to maintain the standards of living we had in 1940.

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THE NEW HARVARD PSYCHOLOGICAL LABORATORIES

S. S. STEVENS AND E. G. BORING

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LOYAL Harvard psychologists always say that the Harvard Psychological Laboratory began with a pair of rooms in Lawrence Hall fitted up by William James when he "founded" instruction in experimental psychology. James later said that this was "in 1874-75, or 1876, I forget which." The year 1876 was three years before Wundt founded the "first psychological laboratory in the world" at Leipzig in 1879 and seven years before Stanley Hall founded the "first psychological laboratory in America" at Hopkins. Of course Stumpf had had still earlier his tuning-fork laboratory, the one that he carried around in a cigar-box under his arm. That would have been about 1875, possibly a year ahead of James.

The original Harvard laboratory seems to have lasted until 1891 when James, by then the author of the *Principles*, raised \$4300 for new facilities and moved to two large rooms in Dane Hall (where Lehmann Hall now stands). Herbert Nichols was put in charge, and then in the next year Münsterberg arrived from Freiburg to take command. There was at once the usual struggle for space, for more small separate rooms. In 1893 Münsterberg split a lecture room up into four little cubicles, and by the turn of the century the laboratory had been increased by various devices to eleven inadequate rooms. In 1901 the move was started to get funds for an adequate building for Philosophy, a building which would include a proper psychological laboratory. It was planned to name the new building for Emerson and to have the funds secured by the time of the Emerson centennial birthday on May 25, 1903. On that date contributions for more than the estimated \$150,000 were in hand. The actual building finally cost \$208,485 (3).

Emerson Hall was dedicated on December 27, 1905, by a debate between philosophers and psychologists as to whether experimental psychology belongs within Philosophy or within the Natural Sciences. Münsterberg, of course, argued for the inclusion

of psychology in philosophy. He quoted Wundt's letter to him on that occasion. "I believe," wrote Wundt, "that psychology, not only now, but for all time, belongs to philosophy: only then can psychology keep its necessary independence." The new laboratory in Emerson Hall had twenty-four rooms besides store-room, lavatories and coat-room. It had a workshop, an instrument room, a room for the student laboratory course, a photographic room, a "sound-proof" room, animal rooms and dark rooms. It was thought to be large and spacious, but in six years it had become too small. On all this history, see (2).

In 1912 Yerkes' animal rooms were moved to ill-partitioned rooms in the attic to make way for Dearborn and educational psychology on the third floor. In 1916 Münsterberg died and Langfeld took over. When Langfeld went to Princeton in 1924, Boring became Director. In 1927 Morton Prince turned up with \$125,000 for a "department of abnormal psychology," which finally became the Fund for Abnormal and Dynamic Psychology and thus the Harvard Psychological Clinic. The clinic lived in one divided room in Emerson Hall for two years, migrated to a house near the Charles River, migrated to another house on Plympton Street, where it is now a part of the new Department of Social Relations.

In 1929 Emerson Hall was bursting and we secured the top-floors of Boylston Hall, built in 1857 and then being vacated by the chemical laboratories. There we housed animal psychology and the student laboratory course. On this demand by us for rooms vacated by Chemistry, President Lowell remarked that "professors are like a perfect gas: they fill all the available space." In 1934 Lashley arrived and was given space for his Laboratory of Physiological Psychology in the Biological Laboratories, where he remained until he went off to the Yerkes Laboratories of Primate Biology in 1942.

In 1940 the Psycho-Acoustic Laboratory was

begun to investigate problems in hearing and communications. Stevens was in charge and was presently made its Director. The funds came first from the OSRD; now they come from the Navy. The laboratory was built in the east basement of Memorial Hall, a huge pile of Victorian Gothic begun in 1870 and finished in 1876 as a memorial "to the men of Harvard who died to preserve the Union." Its renovation was a hard campaign against ugly pipes, decrepit coal bins, defunct oil tanks and disintegrating boilers. A few rooms at a time these sooty reaches yielded to the conquest of carpenters, painters, electricians. Initially skeptical, the University's administration gradually became delighted to find that, wholly unsuspected, the mountain of Memorial Hall had in it something quite as good as gold: good usable space.

For two years then, from 1940 to 1942, psychology at Harvard went on in five buildings and four autonomous laboratories: (1) the Laboratory of General Psychology in Emerson Hall (Boring in charge), which also housed social psychology and the offices of the Department; (2) the annex in Boylston Hall where there was everything that could be squeezed in nowhere else; (3) the Psychological Clinic on Plympton Street (Murray in charge), which promoted truly experimental research on personality as well as the other forms of personality assessment; (4) the Laboratory of Physiological Psychology in the Biological Laboratories (Lashley in charge); and (5) the Psycho-Acoustic Laboratory in Memorial Hall (Stevens in charge). Paradoxically the thing that brought experimental psychology together was the fission.

The great fission occurred in 1946. It began with a fusion. Social psychology, cultural anthropology and sociology wanted to unite in a common effort, establishing for themselves a Laboratory of Social Relations. They formed the Department of Social Relations, and took along with them the Psychological Clinic (1). But they needed space for their laboratory. Emerson Hall might provide it if psychology got out. Psychology might go to the Biological Laboratories, but then what about the Psycho-Acoustic Laboratory? We were tired of having experimental psychology scattered all over Harvard's part of Cambridge, of being strangers to our own departmental colleagues. We were ready to give all our isolated attics back to the

Founding Fathers for a chance at unification in a basement.

The Provost was persuaded. In two jumps the Corporation appropriated \$150,000 to remodel the rest of the basement and some of the first floor of Memorial Hall for the combined Psychological Laboratories, authorizing the first use of this plural title in its appointment of E. B. Newman as Associate Director of the Psychological Laboratories. Added to what already housed the Psycho-Acoustic Laboratory, the new space brings the total to 30,000 square feet (compared to our 10,000 in Emerson Hall). As the new laboratories come into function, there is discoverable no sharp line of demarcation between the separate units—general, physiological and psycho-acoustic. Duplication of function is avoided. Research projects and permanent functions are localized wherever convenience dictates. The graduate students and their researches range freely about. The shops do work for everybody. The library and seminar room are communal and the use of common facilities tends to produce common goals and good morale. Whether the fission from social psychology was good or bad, the fact remains that the experimentalists have it to thank for their own close fusion as well as for their new laboratories.

The plan shows the lay-out. We have on the lower floor ninety-nine rooms (101-199) if we count a few closets, and on the upper floor, on the north side where the old serving kitchens for the college commons used to be, nine more rooms (201-209, at the upper left part of the plan). We have placed the central features—the library, the seminar room, the shops—in the center of the newest part of the laboratories.

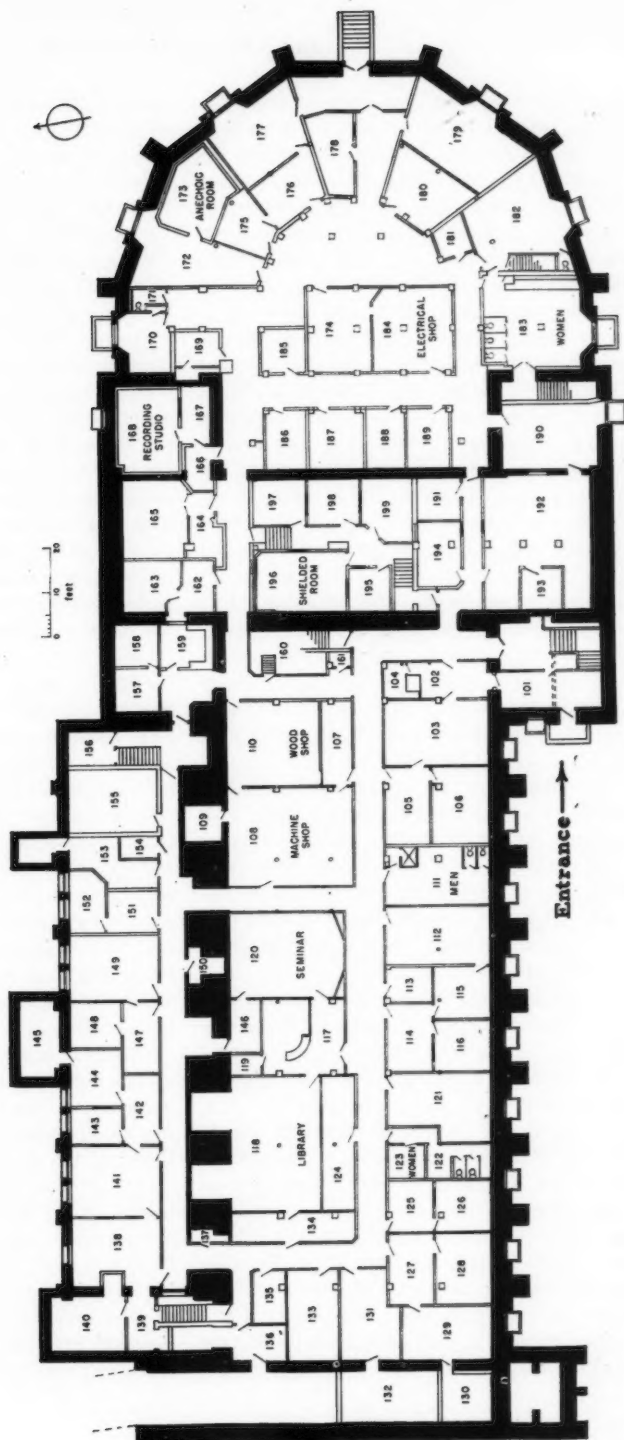
Library. Room 118 is the Robbins Library of Psychology, our part of the old Robbins Library of Philosophy and Psychology. Most of the psychological journals, except those in social and clinical psychology, are there, from Wundt's *Philos. Stud.* to APA's *Amer. Psychologist*. The books are to be built up to constitute a working library, all of them, like the journals, being duplicates of the main Widener Library. If the trend continues and libraries double in size every twenty years, the panels hiding the lower shelves of this one will have to be unscrewed within the next decade, and thirty years from now we shall be looking for a new place to stand our volumes. As it stands the

201 LECTURE HALL

203 204 206 205 STUDENT LABORATORY

202 207 208 209

Upper Floor



library has about 600 shelf-feet. On its north side the library has two attractive deep alcoves set in the thick masonry of Memorial Hall's foundations. One of them was originally a bake oven. Room 134, if locked against the hall and open to the Library, can be used as an accessory reading room, a room for typing from library books or for laying out data from books. The librarian or an attendant is behind the curved desk in Room 117.

Seminar Room. Room 120 is the Seminar Room. It has in it a large oval table, 6 x 12 feet, with a metal rail to put your feet on. There are 12 Windsor chairs at the table and 26 more around the room. Green glass 'blackboards' are at one end, and an electric clock on each end wall allows both the preceptor and the essayist, facing each other, to know how goes the enemy. The room is used for seminars, conferences, the regular Colloquium (with tea and cookies), the daily Staff Lunch (make your own sandwiches and draw your own coffee), graduate examinations, and some small conference classes. Because some of these functions are oral-phageal—we have a pantry in Room 146, with electric refrigerator, kitchen sink, stove and a buffet table. We are committed to the view that ingestion aids intellection.

Graduate Students. We are further committed to the view that the laboratory exists for old hands to do research and to inspire young hands to imitation. (Of course it mostly works the other way around.) Graduate students learn best if they can live their days in the laboratory, having their own desks and tables, bookcases and files. Numerous small rooms, and rooms like 124 divided into cubicles, provide these student nooks. Self-education and group morale are further bolstered by provision for daily student lunches: refrigerator and pantry service in Room 182 and a large conference (lunch) table in Room 179.

Shops. Room 108 is the machine shop where we have the lathe, the bench lathe, the drill press, the grinder, the automatic hacksaw from Emerson Hall, and a new milling machine for which we have been saving for five years. We are fortunate in having been able to keep Ralph Gerbrands—his office is Room 107—as mechanic. His work and his apparatus notes are known to many psychologists.

The wood shop is in Room 110. There Herbert Olsen reigns, another man who has supported the

work of the laboratories for many years. He has two power-saws, a powered jig-saw, a drill press, and a sander.

Laboratory of General Psychology. The general laboratory and the offices of the Department belong approximately in Rooms 101 to 135. Room 101 is the receptionist's, Room 102 the departmental secretary's, Room 103 the chairman's. The other rooms are just the many small rooms which Münsterberg noted in 1901 a psychological laboratory must have. They can be used as research rooms, offices, storage rooms, and their functions will doubtless change from year to year and oftener.

Laboratory of Physiological Psychology. Rooms 138 to 152 are designed for animal care, food storage, steam sterilizing, surgical techniques, and for physiological psychology in general. They have the tiled floors and the drains of the old kitchens, a separate year-round steam supply and a separate air-exhaust system. Otherwise they are like the rest of the laboratory. J. C. R. Licklider is in charge.

Psycho-Acoustic Laboratory. The east end under Sanders Theater holds the Psycho-Acoustic Laboratory, contracted in size to peacetime dimensions. There are offices and research rooms. Photography is in Rooms 157 and 158, drafting in 162 and 163, calculating machines in 169. Room 173 is an anechoic chamber, lined with Fiberglas wedges on the walls, floor and ceiling. Room 177 is the director's office. Room 179 is a conference room. Room 184 is the electrical shop. Room 191 is an electrically shielded room, and across the hall in 192 is a noise chamber where 16 loudspeakers and a 1200-watt amplifier can set up a din equal to about 135 decibels.

The last bit of construction, just being painted as this goes to press, is the subdivision of the old boiler room into Rooms 197, 198 and 199. This was the first space cleaned up and occupied back in 1940 and the last, we fervently hope, to bear the clutter of construction in 1947. The three new rooms will provide for electrical recording from physiological preparations. Operations can be performed in 197, recording equipment can be set up in 199, and in between is a sound-treated, electrically shielded room serviced with compressed air and electrical patch-panels.

Lecture Hall. The Lecture Hall, Room 201,

is upstairs on the first floor. The students and the public reach it by a special door from outside, though we from below have access by two inconspicuous stairways. The room seats 111 persons on 21-inch theater seats with tablet arms and extra leg-room for the lengthening Harvard students. A large projection screen above the green 'blackboard' can be drawn back at an angle into a recess in the wall so as to take projection from a lantern on the desk, or it can be left flush with the wall for projection from the back of the room. Since the windows are blocked up and the room illuminated by fluorescent tubes, there is no difficulty about darkening it for projection. A room for demonstrational apparatus is back of the lecture desk.

The introductory course is too large for Room 201 and must be accommodated in one of the University's larger halls. The present plan is to hold Psychology 1 in Sanders Theater, the nearly semi-circular hall at the east end of the building, directly above the Psycho-acoustic Laboratory.

Student Laboratory. The elementary laboratory course goes on in Rooms 202 to 209. Room 205 has many tables in it and is capable of being divided into booths by partitions if that is desired. The six smaller rooms around 205 make it possible to isolate small groups of students experimenting in the elementary course.

General Features. Psychology in Memorial Hall is ideally and appropriately located on a separate triangle near the center of gravity of the academic scene. To the south is the yard with its libraries, classrooms and the Departments of Philosophy and Social Relations. To the north are the other laboratories, physics, chemistry, biology. Our view, like our interests, extends both north and south.

It actually cost more to remodel Memorial Hall for these laboratories (including the Psycho-Acoustic Laboratory, a quarter of a million dollars) than it cost to build all of Emerson Hall forty years ago; yet the present job has been done as inexpensively as possible. The new walls are of cinder blocks,

painted, but mostly unplastered. Old walls have been used wherever possible. Some rooms have mixed in them walls of kitchen tile, plaster and cinder block; yet, with darker dadoes and lighter upper walls in buffs or greens and plenty of fluorescent lighting, the rooms look homogeneous, bright and fresh. Where we could not afford asphalt tile, we have used the cement floors freshly painted.

We decided against special circuits for timers, and other built-in features that quickly obsolesce. Batteries and timers are taken to the job. Every room has many 110-volt AC outlets, but that is all. Where dark rooms are needed, windows can be sealed against the light. There are enough telephones, squawk-boxes, and P.A. systems to make it possible easily to get contact with anyone in the building.

The Laboratories depend almost entirely upon fluorescent lighting, though the outside rooms get sun through their deep-set windows. There is plenty of ventilation, partly by fans but more by the ducts that rise to the top of the 190-foot tower. The place is, in general, like a cave, warm in winter, cool in summer, and very remote from the hurly-burly of Cambridge; but the effect, with an abundance of lighting and the many glass bricks that have been set in the walls, is one of bright modernity, constant and removed from all effects of season and weather. Acousti-Celotex on the ceilings of corridors and rooms attenuates clatter and enhances this effect of insulation. It is fun to pass from Room 208 into the dark, dingy, vaulted oak, Victorian recesses of old Memorial Hall. It is like dropping back a century in a second.

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Comment

RECOMMENDATIONS TO THE NATIONAL COMMISSION¹ FOR UNESCO

The Constitution of UNESCO states that "wars begin in the minds of men" and that therefore "it is in the minds of men that the defenses of peace must be constructed." New attitudes, new understandings need to be developed. Old hatreds and traditional antagonisms need to be eliminated and replaced by attitudes of trust and confidence.

Efforts to produce these fundamental changes in men's minds can be guided by trial and error procedures as in the past. But the advent of the Atomic Age makes it imperative that such slow and costly courses of action shall no longer be followed. As in the program evaluation procedures utilized by business and government, the best available techniques must be used to achieve in a minimum of time and at least possible cost the changes demanded by the world peace objective.

Existing skills in measuring and influencing knowledge and attitudes can be used. Survey experience can indicate which methods, which content, which appeals, and which approaches are most effective in achieving the desired educational goals with specific groups. Survey research can be used to replace trial and error and thereby permit programs planned and guided by objective measurement. This can materially improve results, as experiments have time and again demonstrated.

Social scientists can make these important contributions available to the work of the United States National Commission for UNESCO through three major activities:

1. Research on projects concerned with social tensions leading to war.
2. International exchange of scientific findings, personnel, and suggestions.
3. Counseling on operational and action research

¹ The report of the recommendations of the Panel on Functions of Social Research to the United States National Commission for the United Nations Educational, Scientific, and Cultural Organisation. The members of the Panel are Robert Cooley Angell, Jerome S. Bruner, Dorwin Cartwright, Richard S. Crutchfield, Wayne Dennis, Clyde Hart, David Krech, Alfred McC. Lee, H. Scudder Mekeel, Donald MacKinnon, Goodwin Watson, and Rensis Likert, chairman.

in order to make techniques and resources available for the planning and evaluation of proposed and on-going projects of the National Commission of UNESCO.

The Section on Social Tensions, under the leadership of Dr. Charles S. Johnson, is making important progress in the first of these areas and is presenting recommendations to the National Commission to carry its work further. At Paris, UNESCO urged that social scientists organize for international exchange purposes in much the same manner as the physical and biological scientists are now proceeding to do, and the Panel on Functions of Social Research urges that similar organizational arrangements be created in the social science field.

The third major activity mentioned above requires, the Panel believes, the formation of a committee of consulting social scientists, drawn from the ranks of those actively engaged in human relations research. The reasons for the Panel's recommendations with regard to the third activity are outlined in greater detail. When relatively limited funds are available, it is doubly important that they be used efficiently. This can only be done when the essential facts required to plan each program are available and when systematic measures are obtained to evaluate and improve each program as it proceeds. Some of the different types of activities which might well benefit from operational or action research are those contemplated by the following Sections:

Community Participation in UNESCO. Action research can help find answers to such questions as these: what motives can dependably be tapped to arouse interest and participation at the grass-roots level; which kinds of programs produce the best results; how does this vary by size and type of community?

How Do We Teach for International Understanding? What interests do students and adults now have that can furnish the drive toward the development of understanding? Why are relatively few college seniors more internationally-minded than they were as freshmen? What educational programs are most

effective at all educational levels in increasing among students their international understanding? What kinds of programs for adults produce the greatest increase in international understanding?

The Revision of Textbooks and Other Teaching Materials. The content of textbooks and other teaching materials can profitably be tested experimentally before being used. Does the content produce the anticipated results? If not, what kind of content would produce such desired results? How does the effectiveness of materials vary with different cultural groups? What changes are needed to achieve similar results with different cultural groups?

The International Exchange of Persons. A few systematic studies have been made of the effect of exchange programs on the attitudes of the persons involved and on discovering which phases of the program produced desirable results and which produced undesirable results. More of this action research to evaluate and guide exchange programs should measurably improve their results.

Press, Radio, and Films in UNESCO (two sections). What persons are reached by each medium? What interests of people should be tapped to obtain the greatest response to these media? What differences in emphasis are required for the results to be most effective with different cultural groups and different socio-economic levels? There are undoubtedly other elements of the UNESCO program as carried out by the National Commission to which these same skills could profitably be applied. The questions that have been suggested are merely illustrative.

The use of action research has expanded greatly in recent years. Some illustrations of the results obtained may make clearer how this tool can be used. A pamphlet that was to be used widely by OPA to explain one of its programs was tested on a small cross-section of adults. It was found that parts of it were not clear or were even misunderstood. Changes were made where the tests indicated the need. The pamphlet proved to be very effective and was used successfully for several months without any further need for revision. Another OPA pamphlet which was not tested was widely distributed to farmers. When a check was made it was found that virtually no farmers either remembered seeing it or were aware of its contents. Action

research showed that the publication *VOIRE* at times achieved the reverse of what was intended. It was the periodical issued by the United States in France for the purpose of improving the attitudes of the French toward us and their understanding of our customs and behavior. For example, one number contained an article on penicillin just at the time when our army had refused to release any of the drug to French civilians. This produced an immediate and widespread unfavorable reaction among the French.

When a study was made to find ways of reducing incendiary fires in the southern National Forests of the United States, it was found that much of the educational material and instructions issued by the Forest Service was couched in language largely unfamiliar to the people they were intended to reach. Moreover, some of the material was presented from a point of view which was resented by the people to whom it was directed and produced a reaction opposite to that desired. These results were used in revising the materials. An informational program aimed to encourage the dairy farmers in the Great Lakes dairy region to increase their milk production, when tested, proved inadequate. It was found that much of the information emphasized was not related to the factors causing farmers not to increase production and failed to present important facts on matters which were the actual cause of farmers not going "all out" on production increases. The program was then shifted to emphasize these important facts with gratifying results.

These are but a few illustrations of many that can be cited to show how action research is being used to sharpen educational programs and make them more effective. UNESCO and the United States National Commission have a very great responsibility. It is essential that they succeed. The probability of their success will depend to no small extent on how well they utilize research in planning and operating their programs.

SUMMARY

To recapitulate, we recommend that, in addition to the Section on Social Tensions, the following be established:

1. A Section on the Social Sciences to function on the international exchange of publications,

personnel, etc., similar to the manner in which the Section on the Natural Sciences is functioning.

2. A committee of social scientists engaged primarily in human relations research to advise the National Commission on matters of action research and assist in making research facilities available when requested for any part of the program of the National Commission of UNESCO.

In the establishment of the proposed Section and Committee, it would be highly desirable for the National Commission to consult with the Social Sciences Research Council and the established national professional research societies.

A PROPOSAL FOR A CODE OF ETHICS FOR PROFESSIONAL PSYCHOLOGISTS

The following code has been adopted by the Minnesota Society for Applied Psychology. It is printed with the idea that it will be of interest to all professional psychologists.

The responsibilities of the professional psychologist to the public, to his clients, to his colleagues and to the profession generally.

I

The psychologist offering his professional services to the public is responsible for a high level of professional competence. He will, therefore, attempt to handle only those psychological problems in the solution of which he has acquired adequate skill.

II

Psychological data relating to individuals should be held confidential and divulged only under the conditions described in this code. Where the psychologist serves as a counselor or therapist, psychological data or interpretations will be divulged to others only under circumstances agreed to by the counselee. Where the psychologist serves an industry, business, or public agency and the psychological data are regarded as the property of that organization, it is the responsibility of the psychologist to make this relationship known to the individuals tested or

interviewed, and not to obtain in confidence information which cannot be retained in confidence. Where the psychologist serves in a situation with divided responsibilities, as between counselees and potential employers of the counselees, he will make clear to both the nature of his responsibilities to both and will carefully maintain the integrity of his relationship to each, to the end that he will not favor one to the disadvantage of the other.

III

The exchange of psychological information regarding individuals between professional psychologists will be accomplished only under such circumstances as will benefit the client. Where information will reflect discredit on the client or will redound to his disadvantage, it will be revealed only as necessary in the public interest or to prevent harm to the client or to others. Where the psychologist is working with members of another profession, he is also bound by the ethical code and practices of that profession with regard to release or exchange of information. Where psychological information is provided to lay persons or groups, the psychologist has the responsibility to present it in such a manner and in such terms as to make it clearly understood and to minimize the possibility of misinterpretation.

IV

In order that public regard of the profession may be upheld and promoted, the psychologist will refrain, in contacts with the public, from disparaging remarks or criticism of his professional colleagues or their techniques. The healthy spirit of criticism which has fostered experimentation, theoretical and technical development within the science of psychology is to be encouraged in professional circles, but will not be so presented to the lay public as to cast doubt upon the competence of the profession as a whole or of qualified workers in the profession.

The psychologist has a responsibility for the advancement of his science, and for making available to the profession generally the results of his research and experience.

Across the Secretary's Desk

NOTES TO APA MEMBERS FROM THE APA OFFICE

GROWTH OF THE APA

The 1945 *Yearbook* listed a total of 4183 members. The 1946-47 *Yearbook* listed a total of 4471 members; 1086 Fellows and 3385 Associates. The total in June, 1947 is 5090 members. In addition, we have 927 Student Affiliates, 55 State Affiliates, and 2 Division Affiliates.

RESTRICTED GOVERNMENT RECORDS

The Social Science Research Council has appointed a Committee on Government Records and Research. The committee was established to collect information on government records which social scientists would find useful for research purposes and, when necessary, to help secure the declassification of these records. If you know of psychological records whose continuing classification as secret, confidential, or restricted is materially impeding research in psychology or the social sciences, let me know. The APA office will serve as a clearing house between APA members and the SSRC committee and will be glad to put members who want help in securing the declassification of records in touch with the committee.

HOW TO JOIN AN APA DIVISION

One of the most frequent letters coming to the office asks how the writer can become an Associate or Fellow of a Division. Last January we published a summary of the requirements of each division and a statement of how to apply for divisional membership. So when we get these letters, we refer the writers to page 24 of the January, 1947 *AMERICAN PSYCHOLOGIST* and tell them that they must write directly to the secretaries of the divisions for application blanks. Names and addresses of all division secretaries were printed on page 126 in the April, 1947 *AMERICAN PSYCHOLOGIST*.

PSYCHOLOGICAL MONOGRAPHS

On April 23 four issues of the *Psychological Monographs* were mailed to subscribers: Vol. 59, 1945, numbers 275 and 276, and Vol. 60, 1946, numbers 277 and 278. Two more numbers of Volume 60,

which should have appeared in 1946, will be mailed shortly.

Subscribers to this year's Club A and Club B will receive no *Monographs* until the 1947 numbers begin to appear. We hope this will be before the end of 1947.

GIFTS TO FOREIGN LIBRARIES

During the past year the APA has sent gifts of APA journals for the years 1939 through 1945 to nearly 20 foreign libraries that were destroyed, partially or wholly, during World War II. Getting all those journals collected, sorted, packed, and shipped off has been a sizeable job. We were rewarded this spring when a letter came from Professor Doctor F. J. Rutten, Psychologisch Instituut, Nijmegen, Holland. He wrote:

"In September, 1947 we received your very kind letter . . . in which you informed us that a great number of journals, published by your Association, was on its way to Holland.

Our expectations were high, but I am afraid no words can describe our wonder and our gratefulness when we opened the two chests. . . .

I wish I were able to express our gratefulness in better words. But be convinced that, while reading your journals, we shall never forget the generous hand that sent them to us."

THE APA'S ADDRESS

Every APA journal shows that it was printed at two addresses, the office address in Washington and the printer's address somewhere else. The second address is carried because the postal laws and regulations require second-class mail matter to show the address where it is actually printed. Since our journals are printed in five different cities, they carry five different addresses. That confuses many of our subscribers and some of our members; they write to the APA in Lancaster, Pennsylvania or Colorado Springs, Colorado, or they send change-of-address notices to the printers instead of to the APA. The letters are forwarded, of course, but time is lost in the forwarding. All mail concerning the journals should be sent to the Washington office. That is the real address of the APA.—DAEL WOLFLE

Psychological Notes and News

A. B. HOSKINS, professor of psychology, Division Extension, West Carolina Teachers College, died March 20, 1947.

BRENT BAXTER, formerly with the Owens-Corning Fiberglass Corporation, is now director of personnel research with the Chesapeake and Ohio Railway Company at Cleveland.

WILLIAM STEVENSON, Institute of Experimental Psychology, Oxford University, England, has written saying, "It may be of interest to the members (of the APA) to learn that at long last, after a history of earlier efforts and influences of Titchener, Stout, MacDougall, and Brown at this ancient university, we have now an Honour School of Psychology and Physiology in which undergraduates may study psychology, a predilection denied to them hitherto. The Association will not be unaware, either, of the significance for psychology of the institution of new chairs in the subject at the Universities of Aberdeen, Liverpool, Sheffield, as well as at Oxford."

GEORG V. BÉKÉSY, University of Budapest, has been granted a year's leave of absence to join the staff of the Psycho-Acoustic Laboratory, Harvard University. Professor Békésy is well known for his work in psychological acoustics, especially in the dynamics of the auditory mechanism. ROBERT GALAMBOS, Emory University, will also join the Psycho-Acoustic Laboratory. He is best known for his work on the ultrasonic "radar" used by bats in flight.

FREDERICK GEHLMANN has been appointed editor of the test department of Science Research Associates. He has been assistant to Dr. L. L. Thurstone, University of Chicago.

RALPH D. NORMAN has accepted a position as assistant director of the Counseling Service and assistant professor of psychology at Princeton University, beginning July 1, 1947.



WALTER VANDYKE BINGHAM (picture above), who has served the War Department for the past seven years as Chief Psychologist and advisor of the Adjutant General regarding the classification of military personnel, requested last March to be relieved of his responsibilities on June 30. After an extended vacation on his island at Medomak, Maine, Dr. Bingham will return to Washington where he will serve part time as an expert consultant to the Secretary of War and as chairman of the Council Advisory to the Director of Personnel and Administration, War Department General Staff.

Upon acceptance of his resignation Dr. Bingham received a letter from Major General Edward F. Witsell, the Adjutant General, which reads in part as follows:

"Your service in the Army and to the War Department during two wars as an officer and as a civilian, has merited the profound respect which we have for you both in your official capacity as Chief Psychologist and as a friend. The emblem for Exceptional Civilian Service which has been awarded you is a

testimonial of the value of your service to the War Department. Those of us who have followed your career in the public service know well that your contributions have not been limited to the military sphere. We know that industry, education, and government, during the period between the World Wars, were quick to seize upon the personnel devices which through your efforts proved so effective during World War I. We know that the results of your work, which contributed to the victorious completion of the recent conflict, will continue to influence personnel utilization procedures in the Army and in our total economy."

Dr. Bingham received the Exceptional Civilian Service Award, the highest civilian award conferred by the War Department, for his work in developing and organizing the personnel system of the Army.

FORREST D. BROWN will assume his new duties as dean of students at Fresno, California, on August 1, 1947. He will have charge of psychological testing and counseling.

ANNE ANASTASI has joined the psychology department of the Graduate School of Fordham University where she will develop courses in differential psychology and related areas.

LUCILLE B. KESSLER is now psychologist in the Department of Psychology, New York State Training School for Girls in Hudson, New York.

On the retirement of J. E. W. WALLIN on July 1, RUTH L. TYNDALL will be State Co-Ordinator of Special Education, Delaware.

The Rainier State School at Buckley, Washington, formerly the Western State Custodial School, announces the appointment of H. ROBERT OTNESS as director of the department of research and training. Dr. Otness is now on the faculty of the State College of Washington, Pullman.

LEWIS R. WOLBERG, VICTOR C. RAIMY, VIRGINIA AXLINE, SAMUEL B. HADDEN, GREGORY ZILBOORG, and WILLIAM A. HUNT will be visiting lecturers at the University of Pittsburgh this summer.

NOBLE R. McEWEN, formerly professor of education and psychology, Salem College, North Carolina,

is now clinical psychologist at the Children's Service Center, Wilkes-Barre, Pennsylvania.

LLOYD N. YEPSON assumed the presidency of the American Association for Mental Deficiency at the seventy-first annual meeting of the organization which was held in St. Paul, Minnesota May 28-31.

ALFRED B. UDOW has joined Foote, Cone and Belding Advertising, New York, as account research supervisor and psychological consultant. He will be responsible for research on accounts held by the agency and is available as a consultant on psychological and statistical problems. Formerly he was with Benton and Bowles.

CLIFFORD T. MORGAN, Johns Hopkins University, gave the formal initiation speech for the Sigma Xi Society of Emory University. The title of his address was: "Recent Advancement in Human Engineering."

FREDERICK WYATT has been appointed associate professor (affiliate) in the department of Psychology, Clark University. He will continue as chief psychologist at McLean Hospital.

ARTHUR W. SHERMAN, JR., has received a \$225 grant from the George Davis Bivin Foundation for research in mental hygiene in children and adolescents. He was awarded the grant for his projected study, "Personality Factors in the Psychological Weaning of College Students."

LOUIS P. THORPE will be a visiting instructor at the University of California at Berkeley during the second summer session.

The following persons have been appointed to the visiting summer school staff at George Washington University: KATHARINE OMWAKE, WENDELL CRUZE, and GORHAM LANE.

ERIKA O. FROMM has accepted an invitation from the department of psychiatry of the University of Amsterdam, Holland. The department has asked him to survey the new developments in clinical psychology and testing methods since 1939, the time when Holland was cut off from the rest of the world by war.

HAROLD SEASHORE has published a pamphlet, *All of Us have Our Troubles*, for counselors and others giving advice, concerning the large number of charlatans and well-intentioned but incapable persons advertising counseling services. Order forms may be obtained by writing to the Association Press, 347 Madison Avenue, New York 17, New York.

The American Philosophical Society has awarded fellowships from the Penrose Fund to two psychologists: DAVID H. RAAB, Brooklyn College, for his work in the neurology of hearing and auditory learning in animals, and T. C. SCHNEIRLA, American Museum of Natural History, for studies on the behavior pattern of army ants in relation to underlying ecological and physiological conditions.

WILLARD A. KERR has been named associate professor of psychology and education at Illinois Institute of Technology as of September 1. He was formerly assistant professor of industrial and social psychology at Tulane University.

On April 9, 1947 the War Department removed the restricted classification from over 50 educational and psychological tests prepared before and during the war, including Forms 1a and 1b of the Army General Classification Test. These forms, along with later forms to which they have been carefully equated, have been administered to more than 10 million men. The educational achievement tests are experimental editions which have only been partially validated; they are unstandardized. They should prove valuable mainly as sources of items for high school and college tests.

PAUL H. SCHILLER, head of the psychology department at the University of Budapest, Hungary, lectured on May 27 and 28 at the Harvard Psychological Laboratories on "Wartime Psychology in Central Europe." On June 5 he gave a seminar at Bellevue Hospital on "Interaction and Anticipation." Dr. Schiller is now on leave as a research associate at Columbia University, and will spend the next academic year at the Yerkes Laboratories, Florida.

The Illinois Association for Applied Psychology has planned an Institute of Applied Psychology in

cooperation with Northwestern University, at Abbott Hall, 719 Lake Shore Drive, Chicago, August 15-16. For further information write Dr. Gordon V. Anderson, Department of Psychology, Northwestern University, Evanston, Illinois.

SUSAN K. DERI is offering introductory and advanced courses in the Szondi test during July and August at the Graduate School, New York City College.

An international Congress on Mental Health will be held from August 12-21, 1948, at Central Hall, Westminster, London. The Congress will be divided into three main sessions. The first, the International Conference on Child Psychiatry, under the auspices of the International Committee for Child Psychiatry, will hold its meetings on the mornings of August 12, 13, and 14. The theme will be foundations of mental health in childhood. The second, the International Conference on Medical Psychotherapy, under the auspices of the International Federation for Medical Psychology, will meet on the afternoons of August 12, 13 and 14. The topic will be guilt. The third session, the International Conference on Mental Hygiene, will meet on August 16-21 to discuss mental health and world citizenship. All requests for information about the Congress should be sent to the Organiser, International Congress on Mental Health, 39 Queen Anne Street, London W. 1, England.

The Kentucky Psychological Association held its Spring meeting at Western State Teachers College, Bowling Green, Kentucky. NOBLE H. KELLEY was elected president and PAULINE KLINGER continued as secretary-treasurer. The members of the executive committee are MARGARET RATLIFF, H. H. HUMPHREYS and W. E. WATSON.

HELEN S. SHACTER has been elected president of the Illinois Association for Applied Psychology, THOMAS W. HARRELL, vice-president, JULIAN H. PATHMAN, treasurer, and AGNES A. SHARP, member-at-large of the executive committee. MILTON SAFIR, ADAM R. GILLILAND, and PHYLLIS WITTMAN are the other officers for the coming year.

Psychiatry's increasingly important place in the world of tomorrow was discussed at the 103rd annual meeting of the American Psychiatric Association. The meeting was held May 19-23 at the Pennsylvania Hotel, New York City. G. BROCK CHISHOLM, executive director of the World Health Organization, spoke on "The Future of Psychiatry." WILLIAM C. MENNINGER discussed "The Role of Psychiatry in the World Today."

The regional conference of the American Association for Mental Deficiency was held on April 13-19 at San Francisco. This association was organized in 1875 and is made up of psychologists, psychiatrists, psychiatric social workers, and educators who are interested in the training and treatment of mental defectives.

The Southeast Division of the Rorschach Institute was held in Richmond, Virginia on June 5-8. OTTO BILLIG conducted a beginning class in Rorschach technique, and DOUGLAS KELLEY gave an advanced seminar.

The Illinois Society for Mental Hygiene has formulated a legislative program to improve mental hospital conditions. A Citizens' Campaign Committee has been formed to push legislative acceptance of the Society's recommendations which will be presented to the current session of the general assembly.

Science Research Associates has recently released two new tests and a handbook. One of the tests was the *SRA Primary Mental Abilities* by L. L. and THELMA GWINN THURSTONE. This test battery measures five independent areas of intelligence for students from 11 to 17 years of age. The other test is the *SRA Reading Record* by GUY T. BUSWELL. It measures proficiency in the field of reading. The handbook, *How to Use Cumulative Records*, by ARTHUR E. TRAXLER, is designed to aid counselors.

A new journal, *Excerpta Medica*, is being published in Holland. This journal will make it possible for doctors to obtain a complete survey of medical periodicals. It will be published monthly as fifteen separate sectional journals containing abstracts of the world's literature in various fields of clinical and theoretical medicine.

The direction of this enterprise has been placed in the hands of an Editorial Board of three members, DR. M. W. WOERDEMAN, DR. A. P. H. A. DE KLEIJN, and DR. W. P. C. ZEEMAN.

The Committee on Social Adjustment in Old Age of the Social Science Research Council is preparing an information bulletin containing brief descriptions of research projects on aging, both those under way and those contemplated. Persons conducting research in this area are asked to send a description of their projects to Dr. Glen Heathers, SSRC, 230 Park Avenue, New York 17, New York, if they have not already reported to the committee.

Arrangements have been made for rooms for graduate students at Webster Hall, Wayne University, Detroit for the APA Annual Meeting, September 9-13. The charge will be \$1.00 per person a night for a double room with dormitory facilities. Reservations should be made as soon as possible through Arthur E. H. Johnson, Wayne University, Detroit, Michigan.

The War Department is planning to establish a career guidance program for enlisted personnel and warrant officers. It will give these persons an opportunity for specialized education, advancement in grade, and commissioning in the officers' Reserve Corps and in the Regular Army. The Personnel Research and Procedures Branch, AGO, is a focal point in the development of this program.

Dr. Elias Katz, 650 Ocean Avenue, Brooklyn 26, New York, is instituting a study of needs for audio-visual aids in connection with the training of clinical psychologists. He would like information from psychologists on the following points: 1. List all motion pictures, slides, recordings, and other audiovisual aids which you have used in connection with the training of clinical psychologists. Indicate (a) source from which obtained, (b) how aids are used, (c) what results were noted. 2. State briefly those subjects which you include in the training of clinical psychologists which you believe could be presented more effectively by means of motion pictures, slides, recordings, charts, and displays.

The graduate department of the City College of New York is expanding its offerings for the year

1947-48. A very small number of candidates for the MA can be accepted. The fall semester deadline for filing applications for admission as an MA is August 1, and September 1 for those interested in individual courses. Application blanks and catalogues may be obtained by writing Professor Joseph E. Barmack, Department of Psychology, The City College of New York, New York 31, New York.

The Department of Public Institutions, Sussex County Court House Annex, Georgetown, Delaware, has a vacancy for a school psychologist. The requirement is an MA or its equivalent, and the salary begins at \$3000. Applications should be submitted to the above address.

The American Institute for Research at Pittsburgh, which was incorporated last year as a non-profit organization to carry out a research program in personnel psychology, is working on the problem of increased safety in commercial airline flying. The project was requested by the Civil Aeronautics Administration and is being carried on under a contract with the Committee for Selection and Training of Aircraft Pilots of the National Research Council.

The Institute has formulated plans and objectives in terms of a twenty-year program of research, aimed at determination of critical requirements for all activities, the development of a guidance battery of about fifty tests, the establishment of a comprehensive list of educational objectives, and contributions to other problems of personnel psychology.

A number of permanent positions are open in Pittsburgh for assignment to projects similar to the above. In addition, there are opportunities for part time summer employment, involving the interviewing of personnel, test administration, and related work, in various locations throughout the country. The positions range from P-1 to P-8 with salaries from \$2400 to \$9600.

Further information and copies of the application forms may be obtained from the American Institute for Research, Cathedral of Learning, Pittsburgh 13, Pennsylvania.

The Department of Mental Hygiene and Hospitals, Virginia, has an opening for a clinical psychologist. The requirements are competence in testing, and the ability to do occasional work of a therapeutic nature. The salary is approximately

\$4800. Send applications to the Superintendent, Lynchburg State Colony, Colony, Virginia.

The Civil Service Commission has announced an examination for Psychologist (Personnel Counselor) for employment in VA field offices in Washington, D. C., and throughout the United States. The salary is \$4,902 a year. Further information and application forms may be obtained from most first and second class post offices, from Civil Service Regional Offices, or directly from the US Civil Service Commission, Washington 25, D. C.

The Bureau of Personnel, State Capitol, Madison, Wisconsin, announces a vacancy for a Psychologist III, at the State Public School at Sparta. The salary is \$260 a month, and the qualifications are three years experience in clinical work, graduation from college or university of recognized standing, with major courses in psychology, and graduate work. Applications should be made to the above address.

The Mooseheart Laboratory for Child Research, Mooseheart, Illinois, has an opening for a vocational guidance counselor at \$3000 a year. Further information may be obtained by writing Dr. Martin Reymert at the above address.

The Horace H. Rackham School of Graduate Studies of the University of Michigan announces the inauguration of a program for the PhD in social psychology. The new program is under the supervision of the following committee from the department of sociology and psychology: ROBERT C. ANGELL, REN- SIS LIKERT, DONALD G. MARQUIS, and THEODORE M. NEWCOMB, chairman. This program is for students with the MA in psychology or sociology, or its equivalent, including certain prescribed work in each field. It is expected that the students in this program will devote part time to supervised internships which are available to them in the University of Michigan Survey Research Center and elsewhere. Inquiries may be addressed to the Program Chairman, Department of Sociology, University of Michigan, Ann Arbor.

The Connecticut State Hospital, Middletown, Connecticut has vacancies for psychological interns in the psychological laboratory. The salary is \$1380, with full maintenance at a deduction of \$316. Applications should be addressed to Dr. Edgar C. Yerbury, Superintendent, at the above address.

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